

REMARKS

Claims 13-21 remain pending in the present application. Reconsideration and withdrawal of the present rejections in view of the remarks presented herein are respectfully requested.

Rejections under 35 U.S.C. §103(a)

(1) Claims 13-21 were rejected under 35 U.S.C. §103(a) as being unpatentable over Bassett et al. (US 5,145,763) in view of Mizuta et al. (US 6,869,742), further in view of Lee et al. (US 2003/0165570), with the combination of Komano (US 4,847,178), Nishio et al. (US 6,101,816) and Misumi et al. (US 2003/0059706).

(2) Claims 13-21 were rejected under 35 U.S.C. §103(a) as being unpatentable over Okazaki et al. (US 5,422,221) in view of Nishi et al. (5,759,736), Mizuta et al. (US 6,869,742), further in view of Lee et al. (US2003/165570), with the combination of Komano (US 4,847,178), Nishio et al. (US 6,101,816) and Misumi et al. (US 2003/0059706).

(3) Claims 13-21 were rejected under 35 U.S.C. §103(a) as being unpatentable over Mizuta et al. further in view of Lee et al. (US2003/0165570).

All three of the rejections are based on the combination of at least Mizuta et al. and Lee et al., with or without additional references. However, as described below, the significant unexpected results achieved by the presently claimed invention could not have been predicted based on any of the references cited in these rejections. These unexpected results strongly support the nonobviousness of the pending claims, and would rebut any *prima facie* showing of obviousness that might be established based on the various combinations of references.

Applicants have previously noted that a positive photoresist composition comprising a photosensitive novolak resin formed from an alkali-soluble novolak resin in which some hydrogen atoms in the phenolic hydroxyl groups have been substituted by 1,2-naphthoquinone diazide sulfonyl groups is suitable for obtaining good perpendicularity and high sensitivity of a resist pattern in a thick film. However, in general, such a composition has slow development velocity. The present inventors have unexpectedly discovered that this problem can be addressed by using a mixed solvent of a propylene glycol alkyl ether acetate and ethyl lactate. In particular, if the amount of propylene glycol alkyl ether acetate is 70 to 90% by weight, the development velocity of the resist composition is increased while maintaining good sensitivity and perpendicularity of resist pattern formed.

Moreover, the inventors have identified additional completely unexpected results that are obtained from the use of the recited composition. That is, the heat resistance of the resist

composition is also improved. See present specification at page 9, lines 5-10 and page 10, lines 2-4. This effect is clearly demonstrated in Example 2 of the specification at page 29, Table 1 and lines 8-11.

None of the cited references disclose anything that would lead one of ordinary skill in the art to expect either the unexpectedly high heat resistance or the unexpectedly enhanced development velocity while maintaining good sensitivity and perpendicularity. Although Lee uses a solvent mixture similar to that claimed, Lee makes no mention of the foregoing effects. Furthermore, since Lee uses a completely different resin component, it is apparent that Lee could not recognize the unexpected, beneficial effects described above. Therefore the unexpected effects discovered by applicants could not have been predicted based on Lee, or any of the other references either alone or in combination.

In view of the foregoing, even if it were *prima facie* obvious to incorporate pieces of the various cited references to create the presently claimed invention, the presently claimed invention provides at least two significant unexpected results, namely increasing the development velocity and obtaining high heat resistance. These unexpected results would effectively rebut any allegation of *prima facie* obviousness. As such, withdrawal of all of the rejections under 35 U.S.C. §103(a) is respectfully requested.


CONCLUSION

Applicants submit that all Claims are in condition for allowance. If minor matters remain that could be resolved by teleconference, the Examiner is invited to contact the undersigned at the telephone number provided below. Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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